

PICC migration – a problem of the past!

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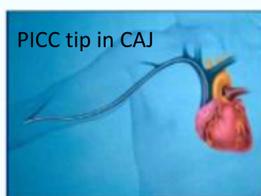
Introduction

The number of patients requiring central venous access continues to increase as the management of Oncology and Haematology advances and life expectancy is prolonged. The result is a larger population of patients who are in need of reliable venous access for treating a variety of conditions.

Infusional Services is a nurse led team providing expertise in vascular access and intravenous therapy for Oncology and Haematology patients. A key role of the service is the insertion of Peripherally Inserted Central Catheters (PICCs).

PICCs are widely used to deliver infusates directly to the central venous system and can remain in place for long periods of time providing no complications occur.

'The tip of the catheter should lie within the lower third of the superior vena cava or near its junction with the right atrium.' National Association of Vascular Access Networks (1998), Infusion Nurses Society (INS), (2016).



Migration from this ideal position has the potential to result in clinical morbidities such as thrombosis and infection, posing significant challenges for the service.

The INS suggest consideration of 'an engineered stabilisation device (ESD) to stabilise and secure Venous Access Devices (VADs) as inadequate stabilisation and securement can cause unintentional dislodgement and complications requiring premature VAD removal'.

All PICCs inserted by Infusional Services for Oncology and Haematology patients were previously secured with an adhesive Statlock stabilisation device.



Adhesive devices adhere to the PICC hub or suture flange allowing the catheter to piston in and out of the exit site. This pistoning action causes irritation of the vein which can contribute to a myriad of catheter related complications (Egan et al, 2013).

The Statlock stabilisation device is renewed weekly, requiring the catheter to be released from the device during which time the PICC is unsecured. This lack of security during dressing heightens both the patients and the practitioners' anxiety leaving the PICC vulnerable to migration.

Preventing PICC migration and inadvertent catheter dislodgement was a major challenge for the service and incurred significant costs for the Trust.

Objective

To reduce PICC migration and associated complications.

Method

- Infusional Services introduced SecurAcath in 2014 as an alternative securement device.
- The company provided the Infusional Services Team with education and training in device insertion and removal.
- Sufficient stock was requisitioned to facilitate transition.
- Infusional Services provided education, training and support to nursing staff to achieve competency in dressing and device removal.
- The change in practice was communicated to District Nurses and training in care and maintenance was offered.
- The Patients' PICC information booklet was amended to incorporate the new device.

Placement of the Device



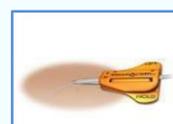
Step 1. Fold anchor base downwards until anchor tips come together. Apply light traction to skin lifting PICC to aid dilation and visualise insertion site.



Step 2. Hold folded base sideways, inserting tips into insertion site until curved segment is no longer visible. Align base with PICC shaft, release base deploying the tips sub-dermally.



Step 3. Align PICC in groove, place cover over base firmly pressing centre and four corners to ensure full engagement.

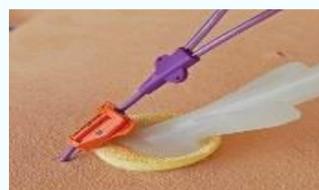


Step 4. The SecurAcath rests on the skin in alignment with the PICC. Dress as per hospital protocol.

Results

An evaluation was undertaken comparing practice prior to and following the introduction of SecurAcath.

- There were no reported incidences of migration or subsequent PICC removal since the introduction of SecurAcath. There were two reported accidental removals that occurred with a confused patient.
- The reduction in chest x-rays to verify the location of migrated catheter tips and the need for re-insertions has decreased patients' exposure to radiation.
- There have been significant financial benefits for the Trust with the one off insertion of SecurAcath and no requirement for PICC reinsertions for migration.
- The increased confidence of staff has resulted in a more efficient dressing change.
- Additional benefits include reduced skin reactions, improved cleansing of the catheter site and greater user satisfaction.



- Initial problems encountered relating to SecurAcath placement and removal were overcome through education, training and support from the company and the Infusional Services Team.
- SecurAcath offers an alternative method of PICC securement for patients who are unable to tolerate adhesive dressings.
- Those patients with a nickel allergy reverted to an adhesive device.

PICC Migration Costs

| Year | Insertion numbers | Securement device | Cost per insertion | Migration requiring reinsertion | Cost of reinsertion |
|----------------------|-------------------|-------------------|--------------------|---------------------------------|---------------------|
| 2013 | 1111 | Statlock | £272 | 66 | £17,952 |
| 2015 | 1139 | SecurAcath | £272 | 0 | £0 |
| Total Savings | | | | | £17,952 |

The above table demonstrates the annual cost savings for the Trust when using SecurAcath for PICC securement compared to the previous practice of adhesive securement devices. The 2013 figures do not include those migration incidences that did not require reinsertion and the additional costs associated with PICC migration. PICC migration is grossly under reported and is difficult to capture.

PICC Securement Cost Savings

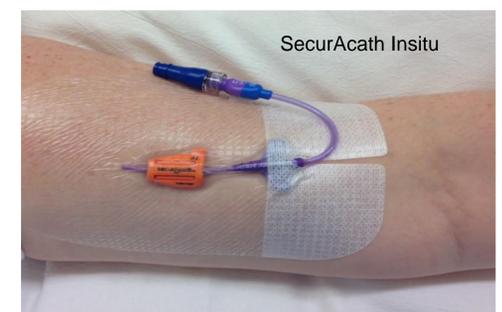
| Year | Securement device | Cost per device | Cost of average dwell time (6 months) | Annual PICC insertions | Cost of securement |
|----------------------|-------------------|-----------------|---------------------------------------|------------------------|--------------------|
| 2013 | Statlock | £3 | £78 (£3 x 26wks) | 1111 | £86,658 |
| 2015 | SecurAcath | £24 | £24 | 1139 | £27,336 |
| Total Savings | | | | | £59,322 |

The above table demonstrates the cost savings associated with using SecurAcath compared to an adhesive securement device.

Conclusion

The introduction of SecurAcath has resulted in significant benefits for both the patient and the Trust. It has eliminated PICC migration and the need for PICC reinsertion. SecurAcath has reduced delays to therapy and the potential for increased bed occupancy. It has increased patient satisfaction and nurse confidence. The benefits of SecurAcath have facilitated the service to meet its growing demand.

The INS recognise that ESDs promote consistent practice among all clinicians, reduces VAD motion that can lead to complications, reduces interruption of needed infusion therapy and may decrease cost of care.



"At the beginning I was scared to remove the SecurAcath device. Infusional Services trained and supported me. Now it isn't a problem. The free SecurAcath 'app' is brilliant"

"Redressing is much less stressful knowing the PICC will not move"

Ward staff

District Nurse

"I have complete confidence that the PICC I have inserted will be secure with SecurAcath compared to the adhesive device"

"I feel confident that my PICC will not move this time. The last time I had treatment I needed my PICC replaced 3 times because it kept moving out"

Infusional Services Nurse

Patient

References

- Egan, G.M., Siskin, G.P., Weinmann, R., Galloway, M.M. (2013) A Prospective Postmarket Study to Evaluate the Safety and Efficiency of a New Peripherally Inserted Central Catheter Stabilization System. *The Art and Science of Infusion Nursing*. Vol 36 No 3 p.181-186.
- Infusion Nurses Society (2016). *Infusion Therapy Standards of Practice*. *Journal Infusion Nursing*.
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